

WHAT IS CLAIMED IS:

1. An over-coating agent for forming fine patterns which is applied to cover a substrate having photoresist patterns thereon and allowed to shrink under heat so that the spacing between adjacent photoresist patterns is lessened, with the applied film of the over-coating agent being removed substantially completely to form fine patterns, further characterized by containing a copolymer or a mixture of polyvinyl alcohol with a water-soluble polymer other than polyvinyl alcohol.
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2. The over-coating agent for forming fine patterns according to claim 1, wherein the water-soluble polymer is at least one member of the group consisting of alkylene glycolic polymers, cellulosic derivatives, vinyl polymers, acrylic polymers, urea polymers, epoxy polymers, melamine polymers and amide polymers.
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3. The over-coating agent for forming fine patterns according to claim 2, wherein the water-soluble polymer is at least one member of the group consisting of alkylene glycolic polymers, cellulosic derivatives, vinyl polymers and acrylic polymers.
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4. The over-coating agent for forming fine patterns according to claim 1, wherein polyvinyl alcohol is copolymerized or mixed in an amount of 0.1 - 5 times by weight as much as the water-soluble polymer other than polyvinyl alcohol.
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5. The over-coating agent for forming fine patterns according to claim 1, which is an aqueous solution having a

concentration of 3 - 50 mass%.

6. A method of forming fine patterns comprising the steps of covering a substrate having thereon photoresist patterns with the over-coating agent for forming fine patterns of

5 claim 1, then applying heat treatment to shrink the applied over-coating agent under the action of heat so that the spacing between adjacent photoresist patterns is lessened, and subsequently removing the applied film of the over-coating agent substantially completely.

10 7. The method of forming fine patterns according to claim 6, wherein the heat treatment is performed by heating the substrate at a temperature that does not cause thermal fluidizing of the photoresist patterns on the substrate.